

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 91-023

REVISED WASTE DISCHARGE REQUIREMENTS FOR CONTINUED OPERATION AND CLOSURE OF CLASS III LANDFILLS FOR:

ACME FILL CORPORATION
ACME SOLID WASTE DISPOSAL SITE
MARTINEZ, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board), finds that:

1. Acme Fill Corporation, hereinafter called the discharger, owns and operates the Acme Sanitary Landfill. The landfill site is located near Martinez, Contra Costa County, immediately southwest of the congruence of Waterfront Road and Walnut Creek Flood Control Channel, about 1 mile east of the intersection of Interstate I-680 and Waterfront Road as shown on Attachment A, which is incorporated herein and made part of this Order.

2. The purpose of this order is to establish waste discharge requirements for the continued operation and closure of the landfill parcels. Further, this order establishes closure requirements for the facility which will allow control and management of leachate and prevent degradation of state waters.

3. The 516 acre facility consists of three Class III waste management units as shown on Attachment B, which is incorporated herein and made part of this Order:

a. North Parcel (approximately 125 acres): Previously permitted to accept municipal and designated wastes. Parcel is no longer accepting waste.

b. East Parcel (approximately 97 acres): Permitted to accept municipal waste.

c. South Parcel (approximately 22 acres): Permitted to accept municipal wastes.

4. The regulatory history for issuance of Waste Discharge Requirements at this facility by the Board is as follows:

a) On April 20, 1976, the Board adopted Order No. 76-36 which authorized disposal in the North and South Parcels and prohibited disposal of wastes onto what is now known as the East Parcel.

b) On April 18, 1984, the Board adopted NPDES permit

CAD0028754, Order No. 84-18 which authorized expansion for a Class II-2 landfill into the wetland areas of the East Parcel and included requirements for discharge to surface or groundwater.

c) On August 17, 1988, the Board adopted Order No. 88-135 prohibiting additional expansion of the landfills into wetland areas.

d) On April 17, 1989, the Board adopted Order No. 89-077. The Order classified the North, South and East Parcels as Class III Waste Management Units as required by Chapter 15, Title 23, Subsections 2510 and 2530 of the California Code of Regulations. The Order required the submittal of a hydrogeologic assessment report, closure Plan and post closure monitoring plan for the North, South and East Parcels.

5. The National Enforcement Investigations Center's (NEIC) Hazardous Waste Group Water Task Force released an "Evaluation of Acme Fill Corporation" on 18 July 1988. The results of the evaluation indicated that the North Parcel is leaking hazardous waste constituents to the groundwater.

6. The California Department of Health Services entered into an administrative consent order and judicial consent order with Acme Landfill Corporation on July 23, 1987. The consent order(s) required a detailed hydrogeologic report to be submitted to and be approved by the Board.

7. A Hydrogeologic Assessment was conducted pursuant to Board Order 89-077. The Hydrogeologic Assessment report was submitted to the RWCQB December 27, 1989. This report discussed regional and site geology, hydraulic properties of the hydrostratigraphic units, site hydrogeology, summary of leachate and groundwater quality, and adequacy of the existing monitoring well network for the North, East and South Parcels.

Geology and groundwater flow patterns:

o Acme Landfill is located in an area described as the Bay Plain which includes a tidal marsh with ground surface elevations less than 5 feet msl (mean sea level). Subsurface investigations have determined that the North and East Parcels overlie 3 geologic units, from deep to shallow: Bedrock, Older Bay mud and Younger Bay mud. The Bedrock is steeply folded, faulted and eroded sandstone and shale. Field tests indicate that the hydraulic conductivity of bedrock ranges from 5×10^{-3} cm/sec to 2×10^{-9} cm/sec. The Older Bay mud consists of discontinuous sands and gravels separated by silty clay. Field tests indicate that the hydraulic conductivity ranges from 8×10^{-2} cm/sec to $5 \times 10^{-}$

⁹ cm/sec. The Younger Bay mud, immediately underlying the waste body, consists of silty clay, sand and peat. The hydraulic conductivity of Younger Bay mud ranges from 3×10^{-3} cm/sec to 5×10^{-9} cm/sec.

- o The Concord Fault has been inferred to pass through the East parcel. However, site investigations have demonstrated no apparent displacement of the Younger and Older Bay mud, based on review of soil cores.

- o Groundwater flow patterns indicate that groundwater discharges north to Suisun Bay.

8. The discharger has not demonstrated if movement recorded by the Slope Inclinerometers could cause displacement of the proposed LCRS during the post closure period of the North and East Parcel. Slope inclinometer readings conducted from January 1989 to December 1989 have recorded some deflection indicating creep deformation of the subsurface Younger Bay mud. Some deflection has been recorded on the East Parcel Slopes. Several inclinometers placed between the North and East Parcel have indicated deflection on the eastern slope of the North Parcel.

9. The waste material placed into the North Parcel consists of solid and semisolid and liquid municipal wastes and hazardous industrial wastes. The hazardous and designated wastes included: sewage sludge and ash, fly ash, filter cakes, cat cracker fines, trichloroethane (TCA), Trichloroethylene (TCE) alkaline sludge, laboratory wastes, catalyst fines, sand blasting waste, and Oily wastes.

10. A perimeter leachate clay barrier wall with an approximate permeability of less than 1×10^{-6} cm/sec was constructed between 1978 and 1984 in response to Board Order Nos. 76-36 and 84-18. The leachate barriers surround the East Parcel, the lowland portion of the South Parcel, and most of the North Parcel. Alone, the leachate barriers have proven to be ineffective in containing leachate based on the groundwater monitoring data of the site. Organic contaminants have been detected in monitoring wells, completed in Younger Bay Mud, located on the outside perimeter of the leachate barrier.

11. Leachate monitoring wells in waste materials in the North and East Parcels indicate that leachate flows radially from the center of the landfills. The general chemistry of the leachate for the North, East and South Parcels has been identified as follows:

North Parcel:

Analyses of leachate in the North Parcel has shown that total dissolved solids (TDS) range from 7900 mg/l to 39700

mg/l. Total suspended solids range from 583 mg/l to 4608 mg/l and total organic carbon ranges from 118 mg/l to 837 mg/l. The pH ranges from 6.0 to 7.9 and specific conductance ranges from 15054 to 44380 uohms @ 25 degrees celsius. Heavy metals have been detected in the leachate at the following concentrations and include: Lead as high as .78 mg/l, Chromium as high as .335 mg/l, Arsenic as high as .197 mg/l, Manganese as high as 2080 mg/l and Mercury as high as .005 mg/l.

Volatile, semivolatiles, pesticides and herbicides have been detected in the North Parcel leachate. Benzene, Xylene and Toluene have been detected in concentrations as high as 160,000 ppb. Phenol and Naphthalene and other semi-volatile constituents have been detected at concentrations as high as 2,100 ppb.

East Parcel:

Several inorganic constituents have been detected in leachate wells constructed in the waste material of the East Parcel. The pH values range from 5.8 to 7.5. Heavy metals detected include: Mercury (.003 mg/l), Chromium (.98 mg/l), Arsenic (.164 mg/l) and Barium (4.7 mg/l).

Organic compounds detected in the East Parcel leachate include: Benzene, Toluene and Xylene as high as 410 ppb. Other constituents detected include Methyl Ethyl Ketone (5,900 ppb), Acetone (840 ppb), Methylene Chloride (1,700 ppb), 1,1 Dichloroethane (289 ppb), cis/trans-1,2-Dichloroethylene (100 ppb), 1,1,1 Trichloroethane (17 ppb), Trichloroethylene (55ppb), Tetrachloroethene (45 ppb). Semi-volatile constituents detected include Phenol, Naphthalene and other compounds as high as 86,000 ppb. Pesticides have also been detected.

South Parcel:

Several inorganic constituents have been detected in leachate wells in the South Parcel. Heavy metals detected include: Arsenic (.063 mg/l), Chromium (.085 mg/l), Lead (.221 mg/l) and Barium (3.25 mg/l). The pH values range from 7.2 to 7.5.

Organic constituents detected in leachate wells include: Benzene (2.2 ppb), Xylene (180 ppb), Toluene (600 ppb), Vinyl Chloride (31 ppb), 1,1 Dichloroethylene (1.5 ppb), 1,1-Dichloroethane (11.2 ppb), 1,1,1-Trichloroethane (6.6 ppb). Semi-volatile detected include: Naphthalene (4.9 ppb), bis(2-Ethylhexyl)phthalate (13 ppb) and Di-n-butyl phthalate (20 ppb).

12. Groundwater Quality:

Detectable levels of organic and inorganic constituents have been found in wells completed in the Younger Bay mud. The pH levels range from 5.8 to 7.6. Commonly detected organic constituents of concern are Benzene, Toluene, Ethylbenzene, Xylene, Phenanthrene and Phenol. Numerous wells completed in the Younger Bay mud have various levels of organic constituents.

Detectable organic constituents have been identified in several wells in the Older Bay mud. Water chemistry analyses have indicated the presence of Benzene, Toluene, Xylene and Diethylphthalate, Methylene Chloride, Acetone and MEK.

Detectable organic constituents in wells completed in Bedrock are Benzene, Dibromochloromethane and Chloroform.

13. The discharger has calculated a water budget for the site. The water budget was based on: observed leachate and groundwater elevations measured in monitoring wells completed in the underlying stratigraphic units and waste body, observed groundwater gradients and infiltration rates under present conditions based on HELP modeling. The water budget estimated, quantitatively, the amount of leachate generated and the amount of leachate leaving the landfill.

14. The discharger has formulated a conceptual model of the site hydrology. The discharger based this model on the estimated water budget calculations and observed groundwater flow directions. The conceptual model assumes that leachate moving up into the waste body is primarily generated by consolidation of the younger bay mud. Settlement analysis and strong vertical gradients observed in the center of the landfill (North and East Parcels) support this theory. Settlement and consolidation has resulted in reduction of pore space and, therefore, volume losses in the Younger Bay mud. This has resulted in groundwater to move up into the waste body due to significant increased pore pressures.

15. The Discharger used the USGS MODFLOW model to verify the conceptual model and determine the effectiveness of the proposed LCRS in containing leachate. The modeling results demonstrated that some input parameters could effect the projected efficiency of the interior extraction wells in terms of establishing and maintaining an inward gradient over the long term. The USGS MODFLOW model was limited in its application since the present and future volume of leachate generated by groundwater moving up into the waste body is uncertain. The ability of the waste body to transmit leachate to the proposed extraction wells is also uncertain.

16. Based on the water budget and the conceptual model, the discharger has proposed a leachate collection and removal system

(LCRS) for the North, East and South Parcels in the revised Closure Plan to prevent leachate from migrating. The proposed LCRS incorporates the following:

For the North Parcel, in-waste extraction wells in the central portion of waste plus a outside pipe drain around approximately 80 percent of the perimeter.

For the East Parcel, a perimeter pipe (french) drain and/or extraction wells installed in the waste designed to maintain leachate levels at an approximate elevation of 0 feet National Geodetic Vertical Datum (NGVD) of 1929.

For the South Parcel, a perimeter pipe (french) drain and/or extraction wells in the waste material around the lowland portion of the parcel.

17. The long-term reliability of the LCRS to contain leachate has not been demonstrated. Therefore, the Board intends to evaluate the effectiveness of the LCRS on an annual basis and to consider establishing a time schedule for installation of a static cut-off wall in the event that the LCRS is found to be ineffective.

18. A full perimeter pipe drain for the North Parcel will be required in order to assure interception of leachate around the entire parcel.

19. A closure plan for the North Parcel was conditionally approved by the California Department of Health Services and the USEPA on May 30, 1989. A revision was submitted by Acme in February 1990. Closure Plans for the East, and South Parcels were submitted to the Regional Board in March, 1990. The February 1990 and March 1990 submittals contain sufficient technical information to evaluate the method of closure based on water quality issues.

20. Background water quality data for purposes of establishing Water Quality Protection Standards (WQPSS) have not been established for this facility as required by Chapter 15. WQPSS will be established based on the average of the first four quarterly monitoring reports following emplacement of the LCRS.

21. The existing and potential beneficial uses for Pacheco and Walnut Creek are:

- * Water contact recreation
- * Non-contact water recreation
- * Warm fresh water habitat
- * Cold fresh water habitat
- * Wildlife habitat
- * Fish migration
- * Fish spawning

22. The existing and potential beneficial uses of local ground waters are:

- * Industrial process water
- * Industrial service supply
- * Agricultural supply

23. A temporary transfer station has been placed on the East Parcel. The discharger plans to continue to conduct ongoing recycling activities on the East Parcel, including but not limited to, composting and concrete/asphalt crushing. A permanent transfer station is being constructed on a non-landfill portion of Acme's 516 acre property. At this time, the utilization and operation of these facilities do not pose an immediate threat to the environment or water quality.

24. The action to update Waste Discharge Requirements for these waste management units is exempt from the provisions of the California Environmental Quality Act (Public Resource Code Section 21000, et seq.), in accordance with Title 14, California Code of Regulations, Section 15301.

25. The Board adopted a revised Water Quality Control Plan for the San Francisco Basin (Basin Plan) on December 17, 1986. The provisions of this order are consistent with the revised Basin Plan.

26. The Board has notified the discharger and interested parties and agencies of its intent to prescribe updated waste discharge requirements for this facility.

27. The Board, in a public hearing, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Acme Fill Corporation or its agents, successors and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The disposal of waste shall not create a pollution or nuisance as defined in Section 13050 (1) and (m) of the California Water Code.

2. Wastes or waste products/constituents shall not be placed in or allowed to contact ponded water from any source whatsoever.

3. Wastes or waste products/constituents shall not be disposed of in any position where they can be carried from the disposal

site and discharged into waters of the State or of the United States.

4. Hazardous and designated wastes as defined in Sections 2521 and 2522 of Chapter 15, and high moisture content wastes including sewage sludge, septic tank waste, restaurant grease, and wastes containing less than 50% solids, shall not be deposited or stored at the site. The only exception to this prohibition is that the discharger may store sewage sludge waste for purposes of a composting project, subject to approval by the Executive Officer.

5. The discharger, or any future owner or operator of this site, shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:

a. Surface Waters

1. Floating, suspended, or deposited macroscopic particulate matter or foam.
2. Bottom deposits or aquatic growth.
3. Alteration of temperature, turbidity, or apparent color beyond natural background levels.
4. Visible, floating, suspended or deposited oil or other products of petroleum origin.
5. Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

b. Ground Water

1. The ground water shall not be degraded as a result of the waste disposal operations.
2. Untreated leachate from wastes and ponded water containing leachate or in contact with refuse shall not be discharged to waters of the State or the United States. Leachate shall not be recirculated into the landfill parcels.

B. SPECIFICATIONS

General Specifications:

1. Water used during disposal operations shall be limited to a minimal amount necessary for dust control, composting and fire suppression.
2. The site shall be protected from any washout or erosion of wastes or covering material and from inundation which could occur as a result of a 100 year 24 hour precipitation event, or as the result of flooding with a return frequency of 100 years.
3. Subsurface drainage and surface drainage from tributary areas, and within the internal site shall not contact or percolate through wastes during disposal operations or during the life of the site. Surface drainage ditches shall be constructed to ensure that all rainwater is diverted off-site and does not contact wastes or leachate.
4. Pursuant to Section 2580(d) of Chapter 15, the discharger shall provide a minimum of two surveyed permanent monuments on or near the landfill from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period. These monuments shall be installed by a licensed land surveyor or registered civil engineer.
5. In addition to survey monuments discussed in Specification B.4, additional survey monuments will be required to determine the displacement of any LCRS installed over the post closure period has occurred. These additional survey monuments are necessary due to past evidence of subsurface displacement. Reporting requirements for these additional monitoring facilities shall be determined pursuant to any self-monitoring program issued by the Executive Officer.
6. The discharger shall establish an irrevocable closure fund, pursuant to Section 2580(f) of Chapter 15, that will provide sufficient funds to properly close each area of the facility and for the post closure maintenance period of at least 30 years. The discharger shall provide an evaluation of closure and post closure monitoring and maintenance costs. The actual post-closure maintenance period shall extend indefinitely until the Board determines that the facility is no longer a threat to water quality.
7. Methane and other landfill gases shall be adequately vented, removed from the landfill units, or otherwise controlled to prevent the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water.
8. The closure of the North, East and South Parcels shall be

under the direct supervision of a California registered civil engineer or certified engineering geologist.

Cover Specifications:

9. As portions of the facility are closed, the exterior surfaces shall be graded to a minimum slope of three percent in order to promote lateral runoff of precipitation. In addition, all completed disposal areas shall be covered with a minimum of 4 feet of cover, as described in Article 8 of Chapter 15, or an engineered equivalent final cover approved by the Board pursuant to sections 2510 (b) and (c) of Chapter 15. The discharger must install a final cover for the North Parcel in accordance with requirements of the EPA and DHS. For the South and East parcels, the Discharger shall implement closure in accordance with requirements of the IWMB and RWQCB.

10. Vegetation shall be planted and maintained over each closed landfill unit. Vegetation shall be selected to require a minimum of irrigation and maintenance and shall have rooting depth not in excess of the vegetative layer thickness.

11. Closed landfill units shall be graded to at least a three percent (3%) grade and maintained to prevent ponding.

LCRS Specifications:

12. The leachate shall be contained and extracted by installation of the LCRS as described below:

a) For the North Parcel, in-waste extraction in the central portion of waste plus a outside pipe drain around the entire perimeter.

b) For the East Parcel, a perimeter pipe (french) drain and extraction wells installed in the waste designed to maintain leachate levels at an approximate elevation of 0 feet NGVD.

c) For the South Parcel, a perimeter pipe (french) drain. If necessary, extraction wells will be installed in the waste. The necessity for extraction wells is contingent, at a minimum, upon the ability of the perimeter pipe drain to manage leachate by itself at the South Parcel.

13. The effectiveness of the LCRS will be evaluated, at a minimum, on the basis of detection and verification monitoring data generated. Further, monitoring of LCRS performance will consist of measuring leachate levels in existing leachate monitoring wells within the North, East and South Parcels, existing or any new groundwater monitoring wells, LCRS system components, and at the additional monitoring points discussed in Specification B.16. If it is determined that the LCRS is not

providing adequate lateral containment, the Discharger must modify the LCRS pursuant to Specification B.14 of this Order.

14. In the event leachate migration from the North, East or South Parcels is detected during verification monitoring, or leachate levels are not significantly lowered and/or maintained in the waste, the discharger shall construct a static cut-off wall which shall be placed at such depths into the subsurface to prevent leachate migration or shall take equivalent action, pursuant to Chapter 15, Article 5. At a minimum, the cut-off wall, if considered, must meet requirements set forth in Chapter 15, Article 3 provisions for Class III waste management units. Further, the cut-off wall must be keyed into natural geologic material having a horizontal hydraulic conductivity of less than or equal to 1×10^{-6} cm/sec.

15. The detection monitoring system shall consist of a perimeter monitoring well network for the North, East and South Parcels pursuant to any self-monitoring plan issued by the Executive Officer.

16. The discharger must provide a monitoring network capable of monitoring groundwater elevations and groundwater quality in each of the identified hydrostratigraphic units beneath the site. The North Parcel will require 40 additional monitoring points to measure leachate levels within the waste body. These additional monitoring points must be screened at appropriate depths and must be appropriately spaced so as to demonstrate that an inward gradient is being maintained and/or established in the landfill. The North Parcel will require additional monitoring wells screened in Bedrock and Older Bay mud. The expanded Bedrock monitoring system must include one monitoring well outside and two monitoring wells inside of the parcel. The expanded Older Bay mud monitoring system must include two monitoring wells inside and one monitoring well outside of the parcel. Installation of any additional monitoring wells or other monitoring points, discussed in this specification, must be completed pursuant to Provision C. 25 of this Order.

17. Leachate extracted or otherwise generated from any LCRS system installed at the dischargers North, East or South Parcel shall be properly treated and disposed.

18. Materials used to construct LCRSs shall have appropriate physical and chemical properties to ensure the required transmission of leachate over the life of the WMUs and the post closure maintenance period.

WQPS Specification:

19. The discharger shall maintain the waste management unit so as not to cause a statistically significant difference to exist

between water quality at the compliance points and the WQPS to be established within one year after emplacement of the LCRS. The compliance points are identified as perimeter groundwater monitoring wells completed in the water bearing zones identified as the Younger and Older Bay mud and the Bedrock which may be potentially impacted by wastes in the parcels. The concentration of indicator parameters or waste constituents in waters passing through the Points of Compliance shall not exceed the WQPS established pursuant to the SMP, which is attached to and made part of this Order.

C. PROVISIONS

1. The discharger shall remove and relocate any wastes which are discharged at this site in violation of this order.
2. Pursuant to Specification B.4, the discharger shall install, at a minimum, two surveyed permanent monuments (per waste management unit) no later than 90 days after closure of any portion of the landfill.
3. The discharger or persons employed by the discharger shall comply with all notice and reporting requirements of the State Department of Water Resources with regard to the construction, alteration, destruction, or abandonment of all monitoring wells used for compliance with this Order or any Self Monitoring Program as required by Section 13750 through 13755 of the California Water Code.
4. The discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or of precipitation and drainage control structures.
5. The discharger shall maintain waste containment facilities and precipitation and drainage controls, and shall continue to monitor ground water, leachate from the landfill units, and surface waters per any Self Monitoring Program established for the facility throughout the post-closure maintenance period.
6. The discharger shall comply with the Self Monitoring Program which is attached to and made part of this Order and which may be amended by the Executive Officer.
7. The discharger shall file with this Board a report of any material change in the character, location, or quantity of this waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries of the disposal areas, change in ownership of the site, or closure plans. This notification shall be given 90 days prior to the effective date

of the change and shall be accompanied by an amended Report of Waste Discharge and any technical documents that are needed to demonstrate continued compliance with these WDRs.

8. In the event of any change in ownership of this waste management facility, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall be sent to the Board.

9. The discharger shall maintain a copy of this Order at the site so as to be available at all times to site operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.

10. The Board considers the property owner and site operator to have continuing responsibility for correcting any problems which arise in the future as a result of this waste discharge or related operations.

11. The discharger shall maintain all devices or designed features installed in accordance with this Order such that they continue to operate as intended without interruption except as a result of this waste discharge or related operations.

12. The owner of the waste management facility shall have the continuing responsibility to assure protection of usable waters from discharged waste during the active life, closure, and post-closure maintenance period of the WMUs and during subsequent use of the property for other purposes.

13. The discharger shall permit the Board or its authorized representative, upon presentation of credentials:

- a. Entry upon the premises on which wastes are located or in which any required records are kept.
- b. Access to copy any records required to be kept under the terms and conditions of this Order.
- c. Inspection of any treatment equipment, monitoring equipment, or monitoring methods in use at the facility.
- d. Sampling of any discharge or ground water covered by this Order.

14. The post-closure maintenance period shall continue until the Board determines that remaining wastes in all WMUs will not pose a threat to waters of the state.

15. The Discharger shall comply with the Standard Provisions and Reporting Requirements, of December 1986, which are hereby incorporated and made part of this Order.

16. This Board's Order No. 89-077 is hereby rescinded.

17. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local laws; and do not authorize the discharge of wastes without appropriate permits from other agencies or organizations.

18. This Order is subject to Board review and updating, as necessary, to comply with changing State or Federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics, in five year increments from the effective date of this Order.

19. The discharger must submit an acceptable leachate treatment plan addressing leachate disposal at each parcel.

Compliance Date: May 1, 1991

20. Pursuant to Specification B.12, the discharger shall submit a modified plan of the LCRS for the North Parcel to incorporate a perimeter pipe drain around the entire perimeter of the parcel.

Compliance Date: June 1, 1991

21. Pursuant to Specification B.16, the discharger shall submit a groundwater and leachate monitoring plan for the North, East and South Parcel acceptable to the Executive Officer.

Compliance Date North Parcel: May 1, 1991

22. The discharger shall submit technical reports upon completion of the LCRS for each parcel to include as built plans and details for a LCRS as discussed in Specification B.12.

North Parcel Compliance Date: February 28, 1992

East Parcel and South Parcel Compliance Date: June 1, 1993

23. The discharger shall submit progress reports discussing the effectiveness of the LCRS which shall be submitted on an annual basis beginning 1 year after each LCRS is installed.

24. The additional interior leachate monitoring points discussed in Specification B.16 must be installed and operational 6 months after this Order is adopted for the North Parcel. Leachate elevations must be reported monthly from these additional monitoring points for the North Parcel beginning 5 months prior to installation of the LCRS. Leachate and groundwater elevation measurements taken from all other leachate and monitoring wells

shall be reported pursuant to any Self Monitoring Program issued by the Executive Officer.

25. If the Discharger, through a detection monitoring program, or the Board finds that there is a statistically significant increase in concentration of indicator parameters or waste constituents over the water quality protection standards (established pursuant to the attached Self Monitoring Program) at or beyond the Points of Compliance, the Discharger shall notify the Board or acknowledge the Board's finding in writing within seven days, and shall immediately resample for the constituent(s) or parameter(s) at the point where the standard was exceeded. Within 90 days, the discharger shall submit to the Board the results of the resampling and either:

a) a report demonstrating that the water quality protection standard was not, in fact, exceeded; or

b) an amended Report of Waste Discharge for the establishment of a verification monitoring program, per Section 2557 of Chapter 15, which is designed to verify that water quality protection standards have exceeded and to determine the horizontal and vertical extent of pollution.

26. If the Discharger, through a verification monitoring program, or the Board verifies that water quality protection standards have been exceeded at or beyond the Points of Compliance, the Discharger shall notify the Board or acknowledge the Board's finding in writing within 7 days. Pursuant to Chapter 15, Article 5, Section 2558, as outlined in Specification B.14 of this Order, the Discharger shall submit, within 180 days, an amended Report of Waste Discharge for the establishment and implementation of a contingency plan.

27. The Board intends to evaluate the LCRS performance pursuant to Provision C.23, in order to determine the effectiveness of the LCRS. Pursuant to Specification B.14, construction of a cut-off wall or equivalent action, if required, must be in-place within 18 months after leachate migration has been verified in the verification monitoring program pursuant to Chapter 15, Article 5. Further, the cut-off wall, or equivalent action, may be required if the leachate levels have not been significantly lowered and/or maintained.

28. Prior to initiation of any construction, the discharger shall submit to this Board and to the California Integrated Waste Management Board, evidence of an Irrevocable Closure Fund, pursuant to Section 2580(f) of Chapter 15. Should a cut-off wall construction, or equivalent action, become a requirement under the terms of this order, the discharger shall submit to this Board and to the California Integrated Waste Management Board

evidence that the Post Closure Fund or an alternative funding mechanism is in place to fund the cut-off wall within 18 months after leachate migration has been verified. Further, the Closure Fund must also provide sufficient funds to perform post-closure monitoring and maintenance of the site. The duration of the post-closure monitoring and maintenance period will continue until the site is determined by the Executive Officer to no longer present a threat to water quality.

29. The discharger shall submit to the Board and the California Integrated Waste Management Board, for approval, a closure and post-closure maintenance plan pursuant Government Code 66796.22 (b) (2). The plan must meet the minimum requirements of Title 14, CCR, Division 7, Chapter 3, Article 7.8, Chapter 5, Article 3.1, Section 18213 (b) and Chapter 5, Articles 3.4 and 3.5. The closure and post-closure maintenance plan shall describe the methods and controls to be used to assure protection of the quality of surface and ground waters of the area during final operations and subsequent use of the land. The plan must include: (1) an estimate of closure and post-closure maintenance costs; (2) a proposal for a trust fund or equivalent financial arrangement to finance the closure and post-closure; and (3) the amount to be deposited in the trust fund or equivalent financial arrangement each year.

30. The discharger shall establish WQPS according to the requirements of this Order and Article 5 of Chapter 15.

(North Parcel) Compliance Date: February 1, 1993

(East and South Parcel) Compliance Date: June 1, 1994

The Board may reconsider the above dates if the construction of individual LCRSS are delayed or if the leachate management is found unsatisfactory to the Executive Officer.

31. After installation of the final cover and the LCRS, the discharger shall submit, within 90 days after the closure of any portion of the landfill, a closure certification report, appropriately signed, that documents that the area has been closed according to the requirements of this Order and Chapter 15.


32. The discharger shall file with the Board quarterly self-monitoring reports performed according to any self-monitoring program issued by the Executive Officer.

33. The discharger shall comply with all applicable provisions of Chapter 15 that are not specifically referred to in this Order.

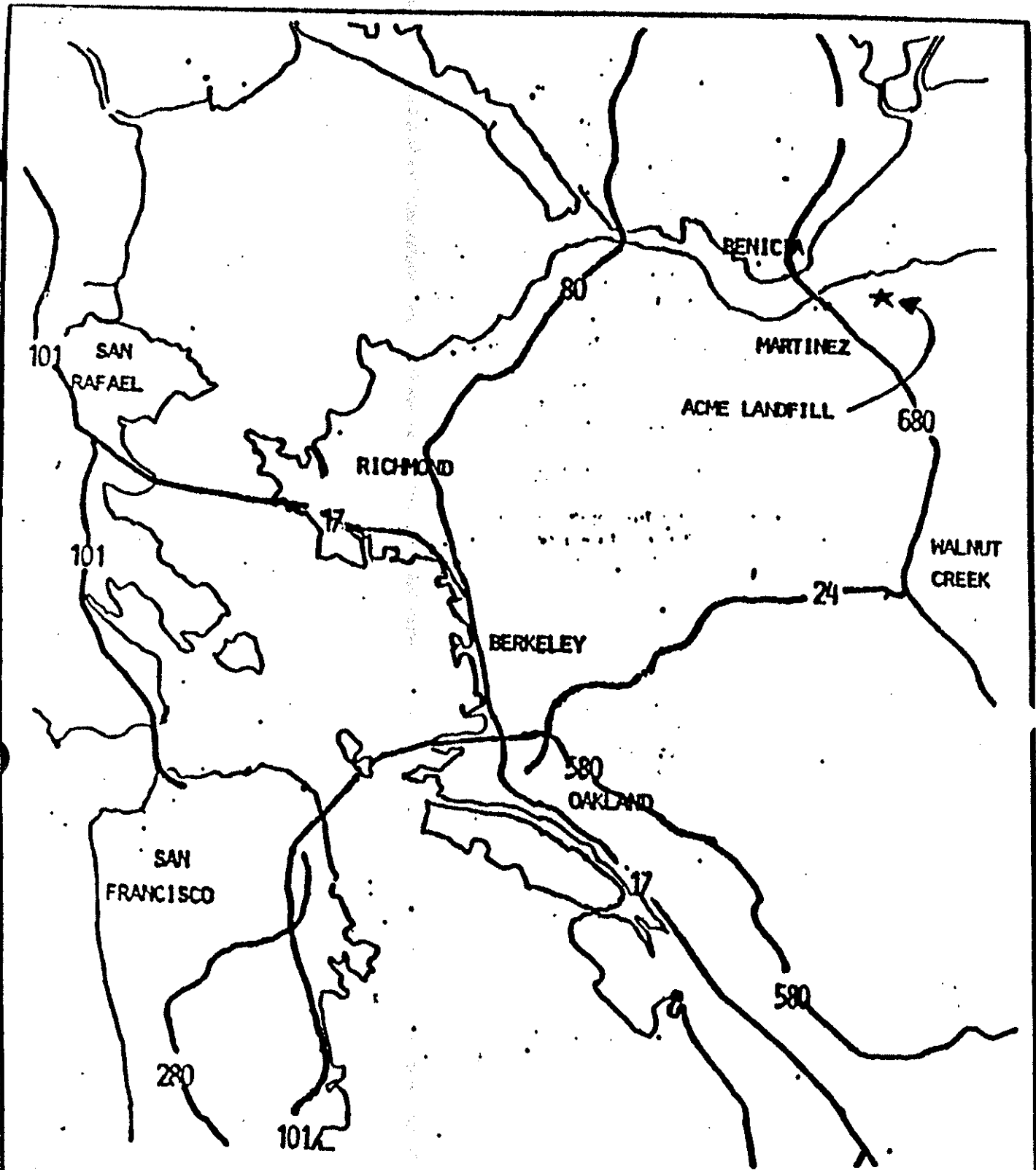
34. All reports prepared pursuant to these Provisions shall be

prepared under the supervision of a registered geologist were applicable, a certified engineering geologist, or a registered engineer. All registrants must be registered in the State of California.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on February 20, 1991.


Steven R. Ritchie
Executive Officer

Attachments: A) Site Location Map
 B) Site Specific Location Map
 C) Standard Provisions and Reporting Requirements,
 December 1986
 D) Self Monitoring Plan, Parts A & B



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ACME LANDFILL CORP.
SITE LOCATION MAP

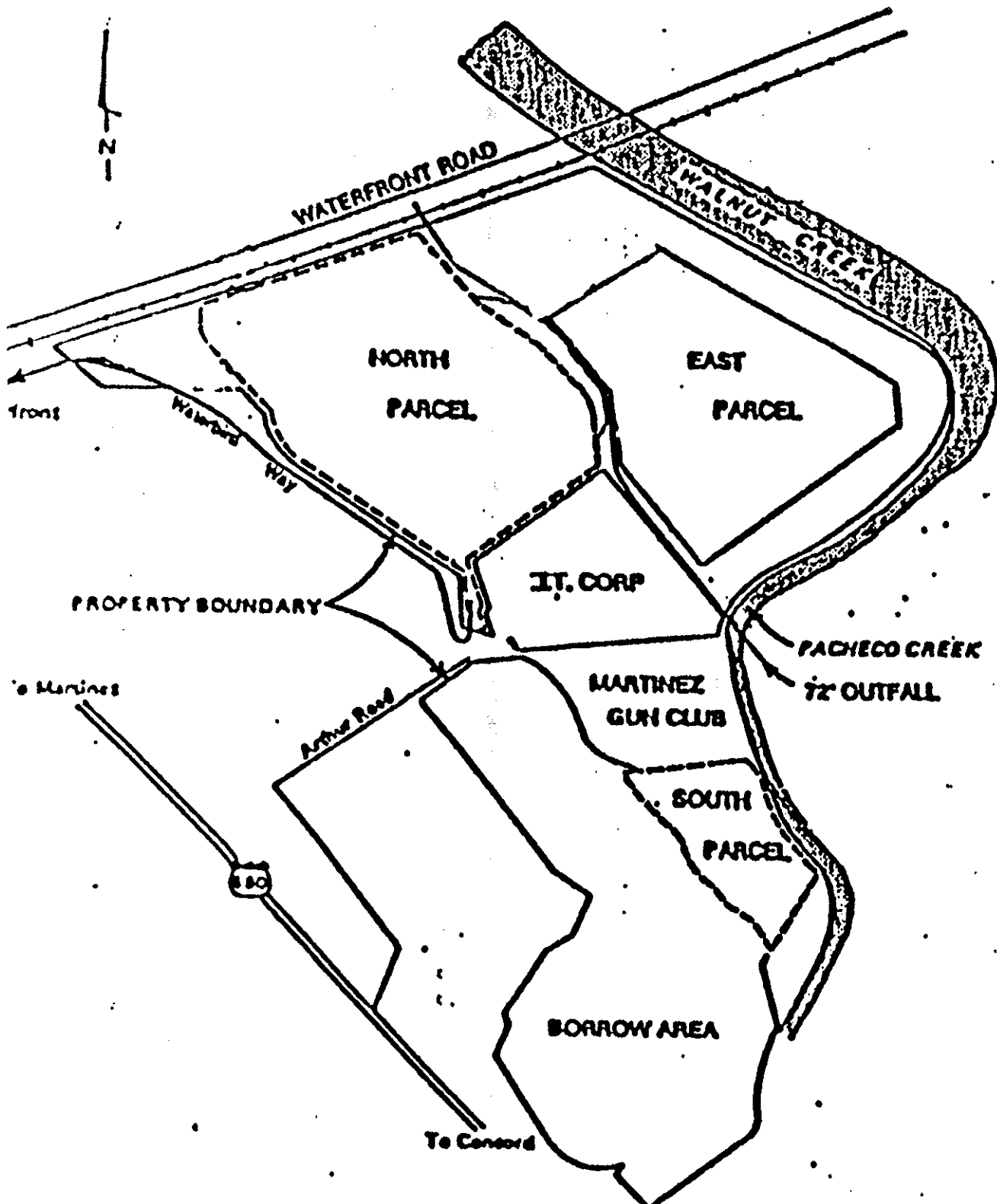
ATTACHMENT "A"

DRAWN BY:

DATE:

DRWG NO.

-2-



0 1000 2000 3000
SCALE IN FEET

STATE OF CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION		
ACME SANITARY LANDFILL		
ATTACHMENT B		
DRAWN BY	DATE	DRWG NO.

Attachment C: Standard Provisions and Reporting Requirements

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

REVISED
SELF-MONITORING PROGRAM
FOR

ACME FILL CORPORATION
NORTH, EAST AND SOUTH PARCEL DISPOSAL SITES
CONTRA COSTA COUNTY

Attachment D:

SELF-MONITORING PROGRAM
Board Order 91-023

PART B:

Introduction:

Modifications to this Self Monitoring Program may be necessary during the post closure period. This Self Monitoring Program becomes effective as the Leach Collection and Removal System (LCRS) becomes operational for each Parcel. Modifications to this Self Monitoring Program will be made individually for each parcel, as the LCRS systems become operational. In general, modifications to this Self Monitoring Program will be dependent upon the ability of the perimeter Leachate Collection and Removal System (LCRS) to contain leachate migration into waters of the state during the post closure period.

A. Groundwater Monitoring Wells:

Initial groundwater monitoring parameters for the first four (4) quarterly self monitoring reports (for each Parcel) will become effective upon installation of the LCRS system and final cover. Initial parameters have been identified based on the previous water chemistry analyses of leachate and groundwater reported for the North, East and South Parcel.

After the first four quarters of self monitoring (of each Parcel), suitable analytical methods and parameters will be selected to evaluate impairment of waters of the state. Other areas of the Self Monitoring Report that maybe modified include: frequency of monitoring, number of monitoring devices and location of any monitoring devices.

Initial parameters to determine impairment of leachate on groundwater at North, East and South Parcel are as follows:

Field: Temperature, pH, specific conductance, alkalinity, specific gravity, dissolved oxygen, turbidity

Laboratory: Total and Dissolved Metals: Iron, Manganese, Sodium, Calcium, Magnesium, Potassium, Mercury, Chromium, Arsenic, Barium and Cadmium.

Others: Chloride, sulfate, TDS, specific conductance, total Kjeldahl nitrogen, chemical oxygen demand, TOC (purgeable and nonpurgeable)

Volatiles (Method 8240)

Semivolatiles (Method 8270)

Pesticides and Herbicides (Methods 8150 and 8080)

Initial locations of the monitoring wells for the North, East and South Parcels are shown in Figures 1 through 6. Frequency of monitoring for each well is shown in Tables 1, 2 and 3. Groundwater elevation measurements shall be taken quarterly for all monitoring wells except stand-by status wells.

The purpose of the stand-by status wells is to replace any monitoring devices which become inoperative during the post closure period or when the situation warrants. These wells shall be maintained in a functioning condition.

B. Leachate Monitoring Wells:

Leachate monitoring wells have been designated in accordance with the leachate wells in place to date of this self-monitoring program. Locations are shown in Figures 6 and 7. Leachate elevation measurements shall be reported each quarter. Parameters to be monitored are to be the same as for the groundwater monitoring devices during the first 4 quarters after the LCRS system is installed for each Parcel. After the first 4 quarters of monitoring suitable parameters to be used as indicator parameters will be identified.

C. Slope Inclinator Monitoring:

Slope Inclinator monitoring points have been designated in accordance with the Inclinator monitoring devices currently in use and surrounding the East Parcel. Continued monitoring will be required and shall be reported on a quarterly basis for at least 1 year after the LCRS systems for the North and East Parcel are installed. After the first four quarterly monitoring reports are submitted, the RWQCB will reevaluate the necessity for continued slope monitoring.

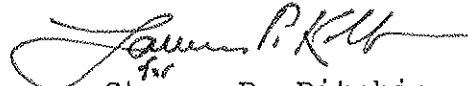
D. Land Observation Stations:

The purpose of the land observation stations are to determine if seepage of the leachate is occurring from the landfill. At least six (6) stations must be established for both the North and East Parcel; three (3) for the South Parcel. These land observation stations must be designated by Acme no later than 30 days after the Leachate Collection and Removal System becomes operative. The proposed location of the land observation stations must be submitted concurrently with the LCRS completion Report for each Parcel. Detection of any seepage should be immediately reported to the Agencies (Regional Water Quality Control

Board, Integrated Waste Management Board and Department of Health Services) and clearly identified in quarterly self-monitoring reports.

I Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program is as follows:

- 1) Developed in accordance with the procedures set fourth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order 91-023;
- 2) Effective on the date shown below; and
- 3) May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer, or request from the discharger.


Steven R. Ritchie
Executive Officer

3/1/91
Date Ordered

Attachments: Figure(s) 1-7: Groundwater and Leachate Monitoring
 Device locations
 Table 1: Monitoring Frequency North Parcel.
 Table 2: Monitoring Frequency East Parcel.
 Table 3: Monitoring Frequency South Parcel.

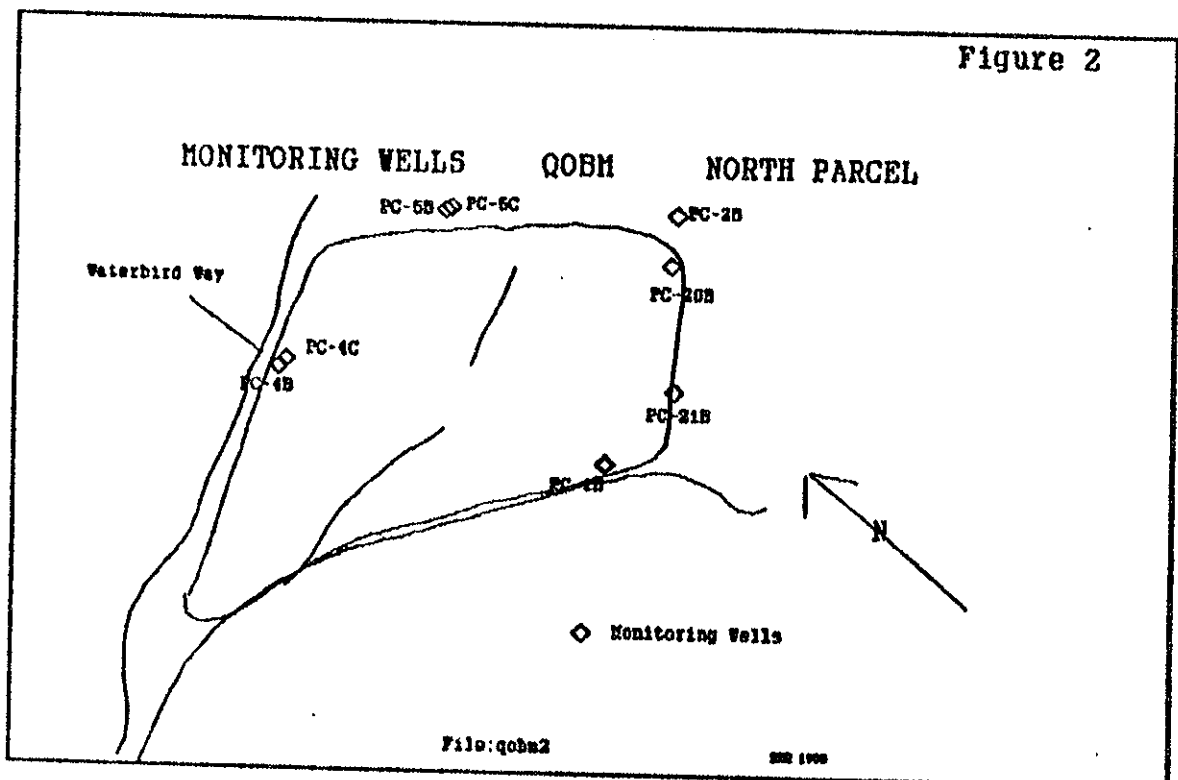
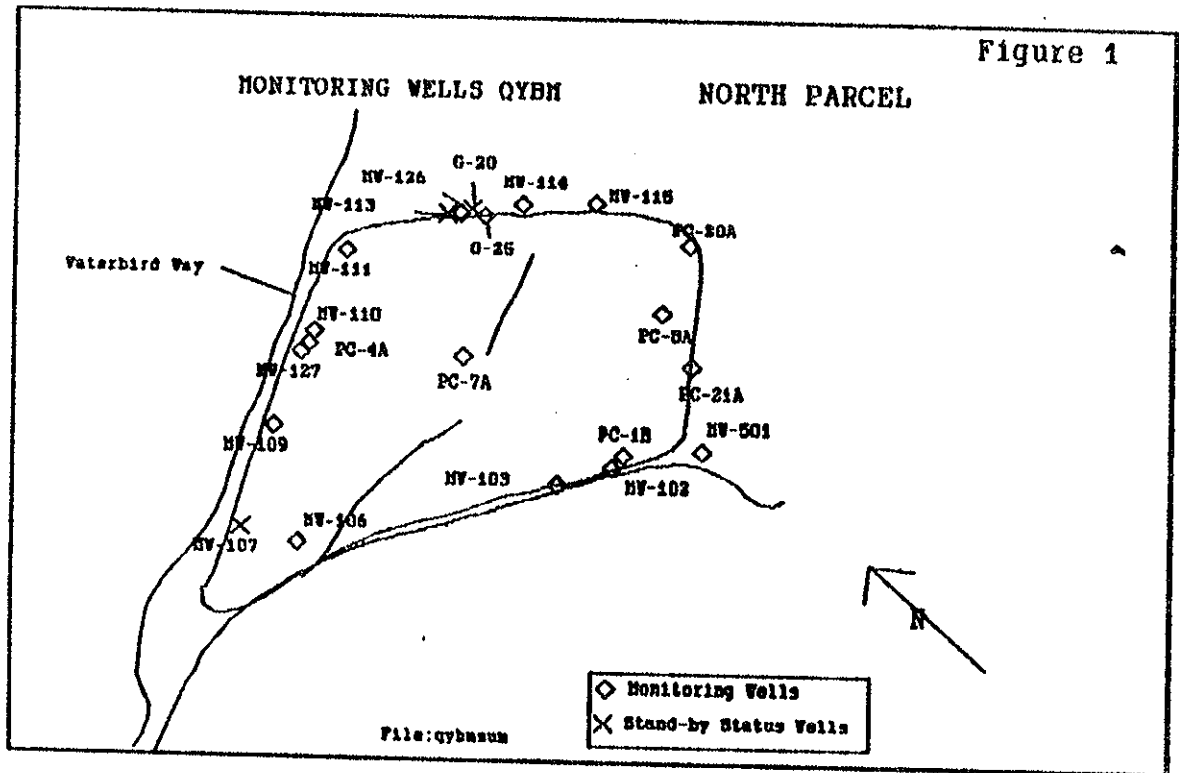


Figure 3

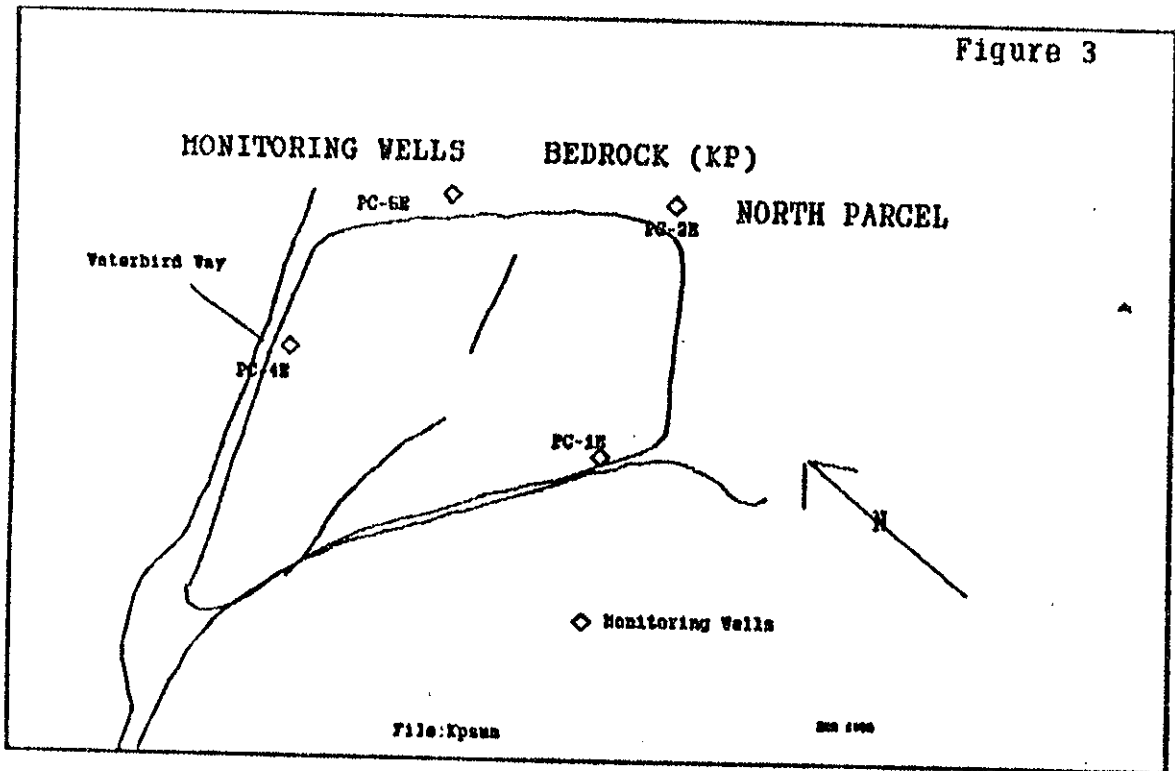
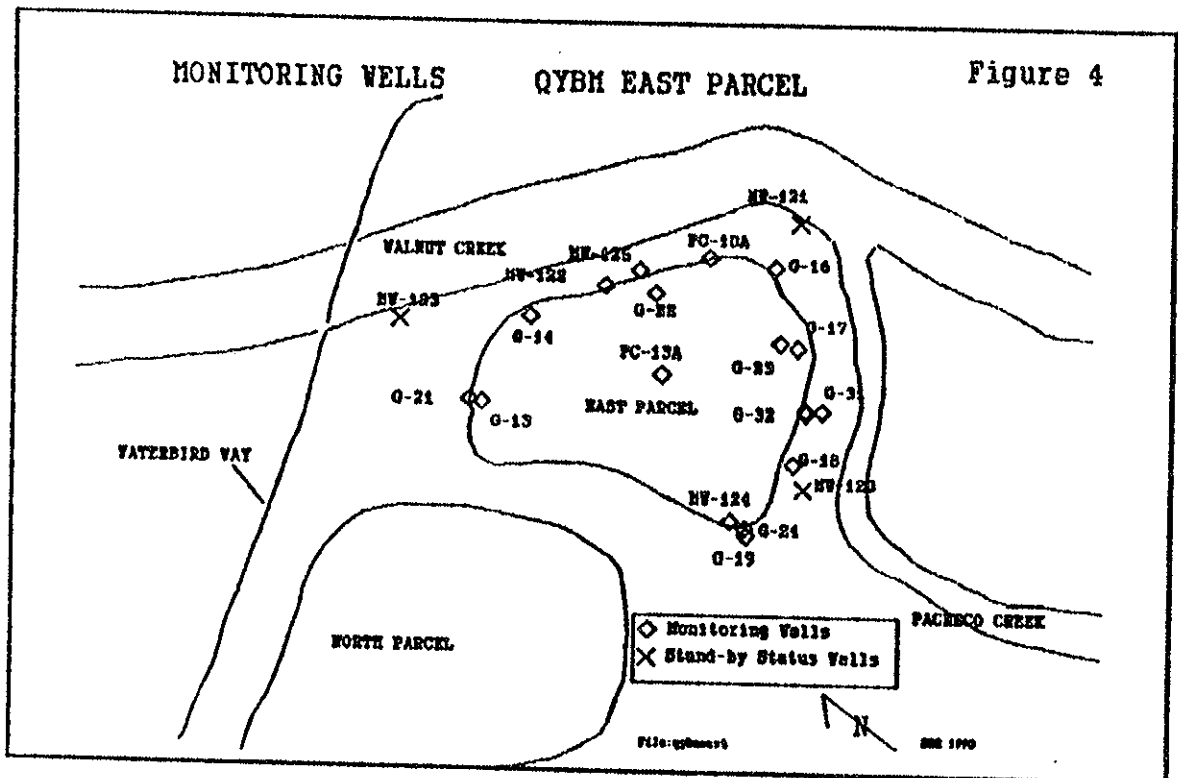
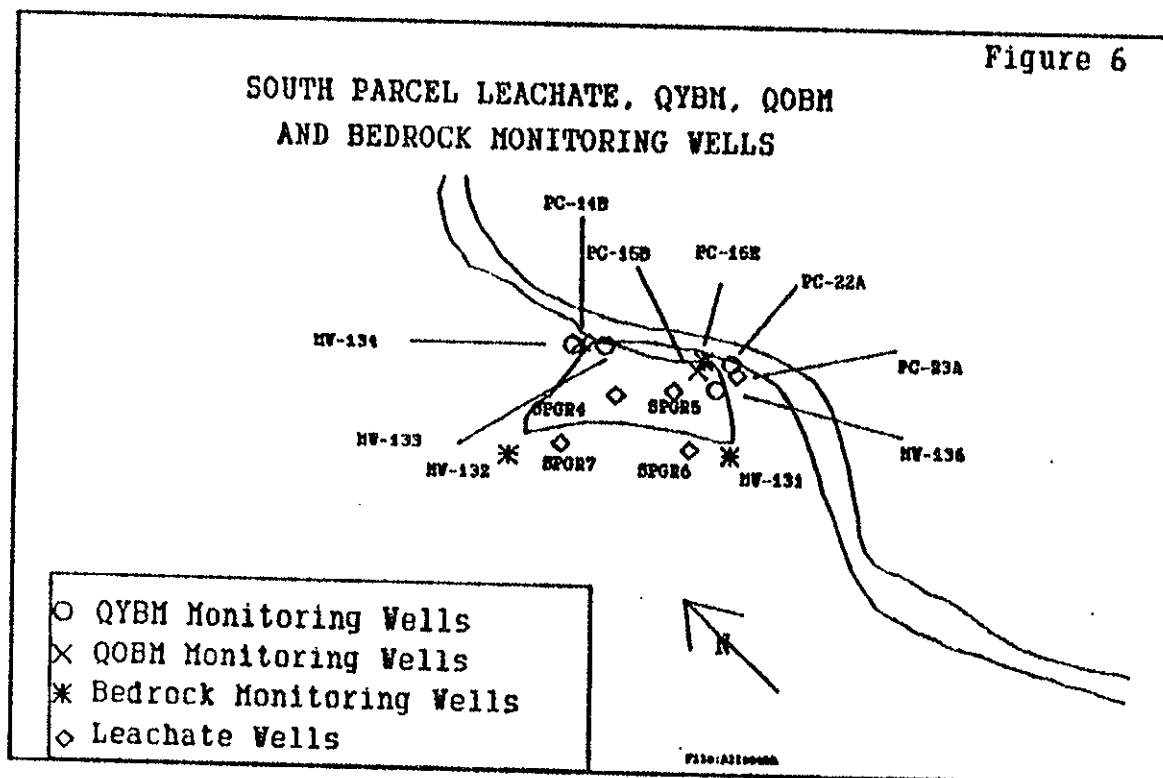
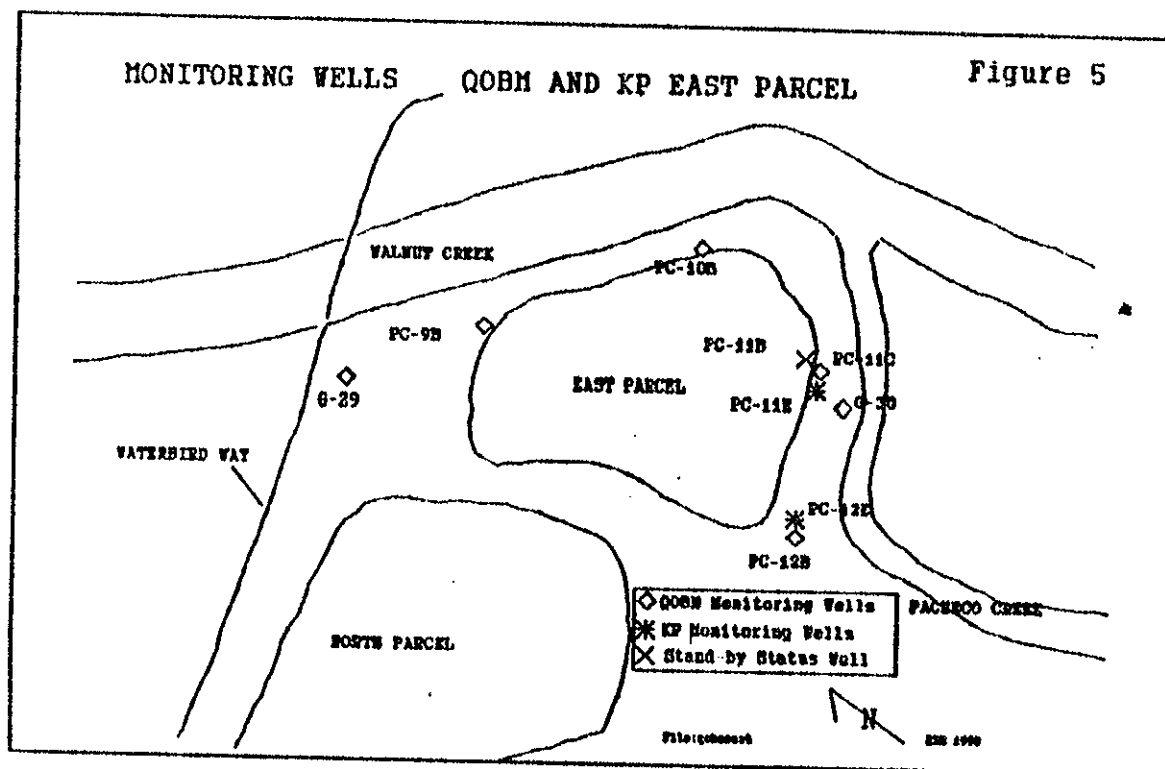


Figure 4





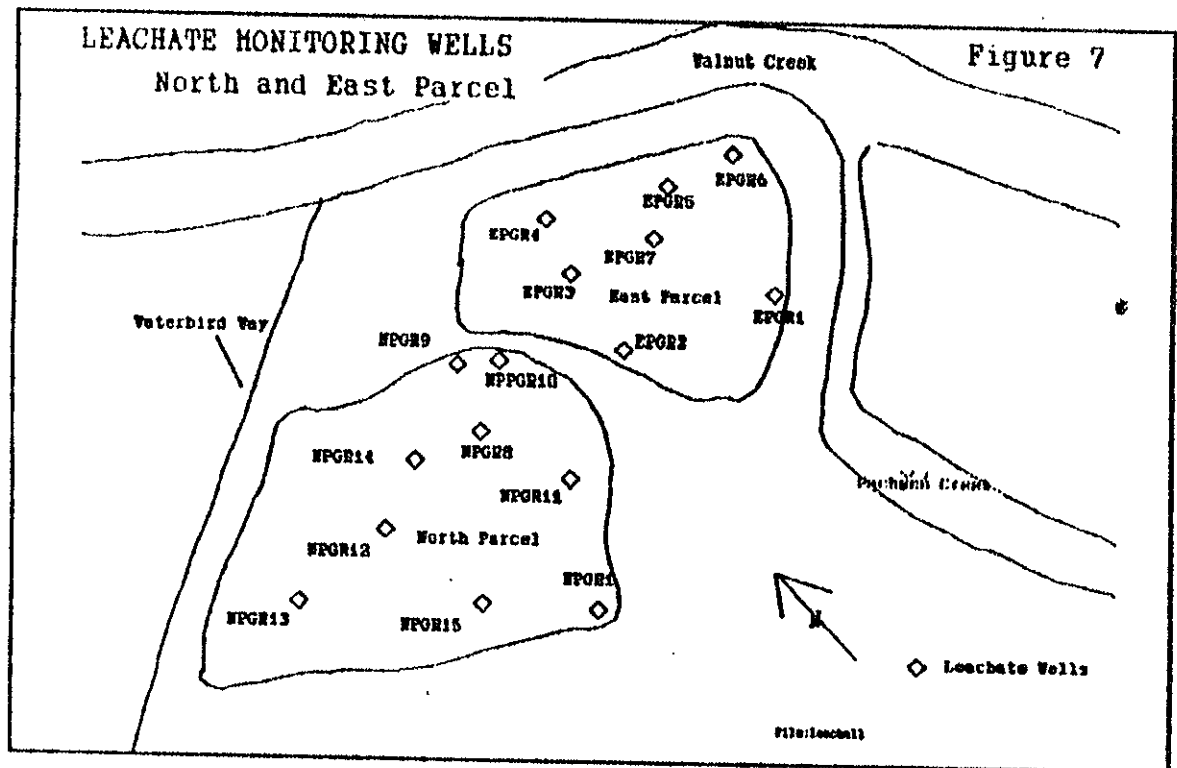


Table 1: North Parcel Monitoring Frequency

Well Designation	Semi Annual Monitoring	Quarterly Monitoring	Stand. by Status
QYBAI			
MW-102		X	
MW-106		X	
MW-109		X	
MW-110		X	
MW-127		X	
MW-111		X	
MW-126		X	
G-25		X	
MW-114		X	
MW-115		X	
PC-4A		X	
PC-7A		X	
PC-8A		X	
MW-103		X	
MW-107		X	
MW-113			
MW-127			X
G-20			X
MW-501			X
PC-20A		X	
PC-21A		X	
WASTE			
NPGR1		X	
NPGR8		X	
NPGR9		X	
NPGR11		X	
NPGR12		X	
NPGR13		X	
NPGR14		X	
NPGR15		X	
QOSM			
PC-1B		X	
PC-4C		X	
PC-5C		X	
PC-2B		X	
PC-20B		X	
PC-21B		X	
PC-5B	X		
PC-4B	X		
BEDROCK			
PC-1E		X	
PC-2E		X	
PC-5E		X	
PC-4E		X	
PC-1E		X	

Table 2 East Parcel Monitoring Frequency

Well Designation	Semi Annual Monitoring	Quarterly Monitoring	Stand-by Status
QYBA			
G-21		X	
G-14		X	
MW-122		X	
MW-125		X	
PC-10A		X	
G-16		X	
G-31		X	
G-17		X	
G-18		X	
MW-124		X	
G-19		X	
PC-13A		X	
G-22	X		
G-23	X		
G-24	X		
MW-121			X
MW-120			X
MW-122		X	
MW-123			X
QYBM			
PC-9B		X	
PC-11C		X	
PC-10B		X	
G-29		X	
G-30		X	
PC-11B			X
BEDROCK			
PC-11E		X	
PC-12E		X	
WASTE			
EPGR1		X	
EPGR2		X	
EPGR3		X	
EPGR4		X	
EPGR5		X	
EPGR6		X	
EPGR7		X	

Table 3: South Parcel Monitoring Frequency

Well Designation	Semi Annual Monitoring	Quarterly Monitoring	Stand-by Status
QYBM			
MW-134		X	
MW-133		X	
MW-136		X	
PC-22A		X	
PC-23A		X	
QYBM			
PC-14B		X	
PC-15B		X	
BEDROCK			
PC-15E		X	
MW-131		X	
MW-132		X	
MASTE			
SPGR4		X	
SPGR5		X	
SPGR6		X	
SPGR7		X	